

Terminal leaflet usually narrowed to a petiolule, the leaves therefore pinnate, with the leaflets deeply divided; ultimate segments few, large, up to 10 mm. long and 7 mm. wide at base; bractlets of the involucre linear-subulate, at flowering time about 3.5 mm. long and 0.8 mm. wide at base, acuminate, distinct at base, not scarious-margined; fertile flowers all pedicellate; anthers purple; fruit about 7 mm. wide, 8 mm. long, the carpels 1- or 2-winged dorsally, the wings broad, white, very spongy (cellular structure similar to that of elder pith), either narrowed or broadened at base in cross section; oil tubes (in the 3-winged carpels) about 7 in the intervals, or (in the 4-winged carpels) 4, none in wing base, about 10 on the commissure. (Funeral Mountains, California)..... *C. gilmani*.

Terminal leaflet scarcely if at all petiolulate, the leaves therefore more nearly digitate than pinnate, with the leaflets less deeply divided; ultimate segments more numerous, very much smaller, the largest about 3 mm. long and 3 mm. wide at base; bractlets of the involucre ovate, acute, about 3 mm. long, 1.5 wide, connate at base, scarious-margined, or sometimes subrectangular, irregularly connate, truncate, erose and mucronate at summit; fertile flowers sessile; anthers yellow; fruit (not quite mature) 5 mm. wide and long, the lateral wings relatively narrow, obviously broadened at base, purplish, the dorsal wing solitary, somewhat reduced; oil tubes 5 or 6 in the intervals, 1 in the wing base, and about 8 on the commissure (Wa-Wa, Utah). *C. basalticus*.

BOTANY.—*New Asteraceae from the United States, Mexico, and South America*.¹ S. F. BLAKE, Bureau of Plant Industry.

The new Asteraceae described in this paper have been found in the course of work on material in the United States National Herbarium and on collections sent to that herbarium for identification.

Chaetospira Blake, nom. nov.

Spirochaeta Turcz. Bull. Soc. Nat. Mosc. 24 (1). 166. 1851. Not *Spirochaeta* Ehrenb. Abh. Akad. Wiss. Berlin 1833: 313. 1834.²

Chaetospira funckii (Turcz.) Blake.

Spirochaeta funckii Turcz. Bull. Soc. Nat. Mosc. 24 (1). 166. 1851.

The monotypic genus *Spirochaeta* Turcz., united with *Elephantopus* by

¹ Received May 29, 1935.

² The volume of the Abhandlungen for 1833 in which Ehrenberg's article appears (there entitled *Dritter Beitrag zur Erkenntniss grosser Organisation in der Richtung des kleinsten Raumes*) is dated 1835 on the title page, but the article itself bears the prefatory note: "Gelesen in der Akademie der Wissenschaften am 2. Juli 1832, revidirt und mit einigen Zusätzen gedruckt im Mai 1834."

most authors but again separated by C. F. Baker³ in his revision of the group in 1902, seems sufficiently distinct in pappus character to merit recognition. The existence of the same name of an earlier date, in current use for an important genus of Bacteria, makes it necessary to rename Turczaninow's genus. In Bentham & Hooker's *Genera Plantarum* it was wrongly considered specifically identical with *Pseudelephantopus spicatus* (Juss.) Rohr (*Elephantopus spicatus* Juss., *Distreptus spicatus* Cass.).

Chionolaena columbiana Blake, sp. nov.

Fruticulus paucicaulis ca. 22 cm. altus dense foliosus undique compacte et canescenter subsericeo-tomentosus aetate fuscescens, bracteis glomerulam involucentibus flavescens-tomentosis; folia uniformia linearia acutiuscula, lamina patente vel demum reflexa ca. 12 mm. longa 2 mm. lata, petiolo cauli arcte appresso scarioso intus glabro laminam aequante; capitula parva ca. 26-flora apice caulis dense glomerata, glomerulam ca. 12 mm. crassam effingentia; fl. fem. ca. 12, hermaph. ca. 14; achenia glabra.

Stems about 3, ascending or erectish, simple or with a single branch above, about 3 mm. thick below; internodes about 1-3 mm. long, the leaves alternate, multifariously crowded; petioles entirely concealed beneath the wool of the stem, linear-oblong, slightly widened above, 1-1.2 cm. long, 2 mm. wide, 3-4-nerved inside, densely tomentose outside; blades linear or slightly linear-spatulate, 1-1.2 cm. long, 1.5-2.5 mm. wide, bluntly callous-pointed, flattish, closely subsericeous-tomentose on both sides especially beneath, 1-nerved, the nerve somewhat impressed above, concealed by the wool beneath; leaves involucreting the glomerule yellowish-tomentose, about equaling the glomerule, of the same shape as the stem leaves; heads campanulate, 4.5 mm. high, 3 mm. thick (when moistened), densely whitish-lanate at extreme base; involucre 4-4.5 mm. high, about 4-seriate, slightly graduate, the phyllaries erect, linear or lance-linear, 0.5-1 mm. wide, obtuse or acutish, entire or slightly erose at apex, pale straw-yellowish, hyaline throughout, the outermost thinly pilose on back and with dull greenish costa extending about half their length, the others glabrous and veinless; pistillate corollas filiform, whitish, 2.5-2.8 mm. long, unequally 3-4-denticulate, ciliolate around apex; achenes (pistillate flowers) linear-oblong, 0.8 mm. long, glabrous, the pappus bristles 18-19, 2.8 mm. long, slender, minutely serrulate, united at extreme base, falling off in groups; hermaphrodite flowers fertile? (the embryo apparently normally developed), their corollas subcylindric, contracted toward middle, 3 mm. long, whitish, brownish on teeth (tube 0.7 mm., throat 1.7 mm., teeth narrow-triangular, 0.6-0.7 mm. long); achenes linear-oblong, 0.5-0.7 mm. long, glabrous, the pappus bristles 22-26, 2.8-3 mm. long, slender, slightly broadened and bluntly serrulate toward apex, united at base and often irregularly united in groups of 2 or 3 for half or nearly their full length, falling off in groups; style branches very short (0.3-0.4 mm. long), oblong, erect, rounded, papillose on back and margin, without obvious stigmatic lines.

COLOMBIA: Páramos of the Sierra Nevada de Santa Marta, about 30 miles inland from Dibulla, Dept. Magdalena, alt. about 4390 m., July 1932, William Seifriz 494 (type no. 1,572,394, U. S. Nat. Herb.).

I have described this species under *Chionolaena* with some hesitation. All

³ Trans. Acad. St. Louis 12: 53. 1902.

true members of the genus hitherto known are Brazilian; the two Mexican and Central American species referred to it by Hemsley, following Benthams and Hooker, are now by general agreement placed in *Gnaphalium*. The characters and relationships of several of the smaller genera of this alliance require fresh investigation based on a full representation of the described species.

Ichthyothere grandifolia Blake, sp. nov.

Herba elata; caulis dense patenterque pilosus pilis brunneis; folia magna ovata v. ovali-ovata petiolata penninervia acuminata base longe cuneata membranacea minute callosa-denticulata utrinque pilosa; capitula numerosa apice caulis cymoso-paniculata pedicellata; phyllaria exteriora minuta dense ciliata, interiora glabra.

"Coarse herb," 2 m. high; stem stout, 6 mm. thick and more, multistriatulate, its hairs many-celled, 2 mm. long; leaves opposite; naked portion of petiole pubescent like the stem, 1.5-2 cm. long; blades of larger leaves ovate or oval-ovate, 22-28 cm. long, 9-12 cm. wide, rather shortly acuminate and somewhat falcate, minutely callous-denticulate (teeth about 0.5 mm. high, 5-15 mm. apart), featherveined (larger veins 3-4-pairs, below middle of leaf), above deep green, on surface evenly and rather densely pilose with many-celled hairs (slightly thickened at base), more densely so on costa, beneath not paler (when young very densely brown-pilose), similarly pilose (the hairs not thickened at base); upper leaves smaller, ovate or lance-ovate, 10-17 cm. long, 4-6 cm. wide; panicles terminal and from the uppermost axils, on densely brown-pilose peduncles 4 cm. long or less, together forming a flattish or convex crowded compound panicle 4-7 cm. wide, the pedicels 7 mm. long or less; heads (as pressed) 4-5 mm. high, 6-8 mm. thick; outer involucre of 5 triangular-ovate acute long-ciliate subherbaceous phyllaries 2 mm. long or less, with very short, more definitely herbaceous, glabrous, rather loose tips, the inner phyllaries (subtending the pistillate flowers) about 3, broadly ovate, boat-shaped, obtuse, thin-margined, multivittate, minutely ciliolate, glabrous dorsally or with one or two short bristles above, 5.5 mm. long; pales similar but thinner and flatter; pistillate flowers about 3, their corollas white, tubular, clavate, truncate, 1.5-1.8 mm. long, densely long-pilose except at base; disk flowers numerous, their corollas white, sparsely stipitate-glandular especially at base of tube and on teeth, 4.8 mm. long (tube 1.8 mm., throat thick-cylindric, 2.5 mm., teeth ovate, 0.5 mm. long); achenes (scarcely mature) obovoid, compressed, glabrous, epappose, 3 mm. long.

COLOMBIA: In woods, vicinity of Las Vegas, Dept. Santander, alt. 2600-3000 m., 21-23 Dec. 1926, *E. P. Killip & A. C. Smith* 16124 (type no. 1,351,893, U. S. Nat. Herb.).

Distinguished, among the species with pilose or villous stem, by its very large leaves with long-tapering base.

Polymnia maculata var. *glabricaulis* Blake, var. nov.

Caulis et pedunculi glaberrimi; folia (magna, sub-5-lobata) supra sparse tuberculato-hispidula subtus sparse hispidula et secus venas primarias hirsuta, pilis ad basin paulum incrassatis.

MEXICO: Cerro Carrizo, near San José, alt. 1465 m., Tamaulipas, 19 July 1930, *H. H. Bartlett* 10508 (type no. 1,491,521, U. S. Nat. Herb.).

From the three varieties into which I divided⁴ this species some years ago, distinguished by the character of their pubescence, the present form is at once separated by its perfectly glabrous stem and peduncles. The plant is also of interest as representing the northeasternmost extension of the range of any form of the species, which has hitherto been known from Zacatecas, San Luis Potosi, and Veracruz south to Costa Rica.

Steiractinia penninervis Blake, sp. nov.

Frutex ramis tuberculato-strigosis et -strigillosis; folia mediocria lanceolato-ovata v. oblongo-ovata acuminata basi lata rotundata v. subtruncata supra scabra subtus minute et dense hispidula ad venas strigosa penninervia venis et venulis subtus prominulo-reticulatis; capitula majuscula subsolitaria breviuscule pedunculata; involucri 1.3–1.5 cm. alti phyllaria extima ovali-ovata v. oblongo-ovata 7–10 mm. longa 3–6 mm. lata basi vix contracta.

Evidently shrubby, alternately branched above; branches rather densely strigose and strigillose, in age glabrate, the hairs with small not conspicuous tuberculate bases; leaves opposite; internodes 1.5–3 cm. long; petioles strigose and strigillose, hirsute-ciliate, channeled above, naked, 1–1.5 cm. long; blades (upper leaves) 6.5–8.5 cm. long, 2.5–3.3 cm. wide, inconspicuously serrulate (teeth about 2–3 mm. apart), above rather harshly strigose and strigillose with slightly tuberculate-based hairs, impressed-veined, beneath strigose or antrorse-hispid on the principal veins, and rather densely hispidulous with antrorse or spreading, very acute, conical, tuberculate-based hairs, featherveined, the principal lateral veins about 12–15 pairs, strongly prominulous-reticulate; heads 1–4 at apex of branches, terminal and solitary in the upper axils, 5–6 cm. wide; peduncles strigose, strigillose, and laxly hirsute, 2–4 cm. long; disk in flower about 1.7 cm. high, 2 cm. thick, in fruit (as pressed) about 1.3 cm. high, 2 cm. thick; involucre about 4-seriate, graduate, the outermost phyllaries 4–5, oval-ovate or oblong-ovate, strigose, hirsute-ciliate, and very minutely strigillose, subherbaceous with short, indurated, 5–8-impressed-nerved base, the next series obovate-oblong or obovate-oval, about 10–12 mm. long, 5–7 mm. wide, obtuse, thinly subscariosus-herbaceous, pilose-ciliate, on back sparsely strigose and hirsute or subglabrous, the next series oblong, subscariosus, 12–15 mm. long, 3–5 mm. wide, ciliate above, glabrous on back, the inmost series similar but much shorter and narrower, minutely erose-ciliolate, glabrous dorsally; pales scarious, 8–10 mm. long, acutish, narrowed below the apex, minutely ciliolate above on margin and on the thin keel; rays probably about 12–15, neutral, golden-yellow, essentially glabrous, the tube 2.5 mm. long, the lamina elliptic-oblong, 2–3-dentate or denticulate, about 12–14-nerved (2 of the nerves much stronger), 2.5–2.8 cm. long, 4–7 mm. wide; disk flowers very numerous, their corollas yellow, glabrous, 7.5–8 mm. long (tube 3 mm., throat slender-funnelform, 4 mm., teeth ovate, 1 mm. long); achenes obovate-oblong, 3–3.8 mm. long, compressed, blackish or olivaceous, glabrous on the sides, above narrowly marginate or winged on one or both edges and there ciliolate, the wings or margins adnate to the saucer-shaped pappus-bearing apex of achene; pappus awns about 25, caducous, slender, hispidulous, mostly subequal and about 2.2–3.3 mm. long, a few shorter and only about 0.8 mm. long.

COLOMBIA: Above San Miguel, at edge of páramo, Dept. Magdalena, alt.

⁴ Contr. Gray Herb. 52: 33–34. 1917.

about 3000 m., July 1932, *William Seifríz* 398 (type no. 1,572,392, U. S. Nat. Herb.)

Distinguished from all the species of *Steiractinia* previously known, except *S. ocanensis* Blake, by its penninerved leaves. In *S. ocanensis*, of which I have for comparison only a small photograph of a specimen of the type collection (*Linden (Schlim)* 183) in the Kew Herbarium, the branches are conspicuously tuberculate by the persistent bases of the hairs, the leaves larger, cuneate at base, apparently much more pubescent on both sides and much less venose, and the outermost phyllaries considerably larger (12–21 mm. long).

Flourensia dentata Blake, sp. nov.

Frutex resinosus glaber valde ramosus; folia lanceolata v. rhombicolanceolata utrinque acuta penninervia, majora 3.5 cm. lata 1.3 cm. longa utroque latere 1–4-dentata, minora saepe integra; capitula mediocria discoidea apice ramorum et ramulorum solitaria basi 1–3-foliaceo-bracteata; involucri ca. 3-seriati paullum gradati 6–9 mm. alti phyllaria extima linear-oblonga v. -lanceolata, cetera obovata margine saepius laciniata; achenia sericeo-pilosa.

Much branched probably erect or erectish shrub 28 cm. high and more, the branches mostly erectish, reddish-brown, the old bark gray; leaves alternate, the internodes mostly 5–20 mm. long; petioles about 1–4 mm. long, margined above; blades of the principal leaves 1.7–3.7 cm. long, 5–15 mm. wide, widest below the middle, cuneately narrowed into the petiole, light or yellowish green, coriaceous, feathervined with about 3–5 pairs of usually obscure veins, dentate or dentate-serrate above the cuneate entire base with triangular, acute or obtuse, sometimes apiculate but not mucronate, irregular teeth 1–2 mm. high; branch leaves mostly entire, smaller, lanceolate or elliptic; heads 9–11 mm. high, 4–8 mm. thick, turbinate-campanulate, 20–26-flowered, erect, solitary at tips of usually few-bracted peduncles or branchlets mostly 1–3 cm. long, subtended at base by 1–3 spatulate or oblanceolate entire or toothed leaves 6–13 mm. long; involucre about 3-seriate, slightly graduate, appressed, 6–9 mm. high, the phyllaries rather few, thick-chartaceous, brownish, the outermost linear-oblong or linear-lanceolate, obtuse, the others obovate or oblong-obovate, somewhat ciliolate at apex, with thinner, narrow or broad, toothed to irregularly laciniate margin; corollas yellow, glabrous, 4.4–4.8 mm. long (tube 0.8–1 mm., throat cylindric to slender-campanulate, 3 mm., teeth ovate, 0.6–0.8 mm. long); pales about 8.5 mm. long, with broad scarious margin and rather abruptly set off, semi-orbicular, erose and lacerate tip; achenes (not mature) cuneate, somewhat thickened, densely silky-pilose, about 6 mm. long, 1.5 mm. wide; pappus of 2 unequal slender linear-lanceolate hispidulous awns 3–4.2 mm. long, readily deciduous, or sometimes wanting; style branches with deltoid, acute, dorsally finely hispidulous appendages.

Mexico: Sombraeretillo, Durango, 9 Nov. 1925, *S. Juzepczuk* 550 (U. S. Nat. Herb, Herb. Leningrad); "campos guayuleros, ad viam," Terreros near Pedriceño, Durango, 11 Nov. 1925, *Juzepczuk* 609 (type no. 1,492,915, U. S. Nat. Herb.; dupl. Herb. Leningrad).

The only species of *Flourensia* with discoid heads and toothed leaves previously known is *F. ilicifolia* Brandeg., of Coahuila. In that species the

leaves are rhombic-ovate, relatively broader (the blades 1.6–2.4 cm. long, 1–1.7 cm. wide), and repand-dentate with 3–6 pairs of stiffly mucronate teeth.

Verbesina lundellii Blake, sp. nov.

Perennis paucicaulis; caules glandulari-hispiduli et hispidi subsimplices paucifolii; folia majora opposita ovata acuta sessilia basi rotundato-cordatula firma triplinervia reticulata sinuato-denata utrinque viridia scabro-pubescentia; capitula 3 majuscula; involucri 2-seriati 7–8 mm. alti appressi phyllaria lineari-lanceolata acuta hispida; radii ca. 11; achenia anguste alata, pappo bidentato.

Few-stemmed herbaceous perennial, 50 cm. high, simple or with a few short branches above; stems erect, subterete, wingless, 2.5 mm. thick, striatulate, greenish, densely spreading-hispidulous with mostly conical gland-tipped hairs of varying lengths and more sparsely spreading-hispid; principal internodes 3–5 cm. long, the upper up to 10 cm.; leaves mostly opposite (4–5 pairs), with about 4 alternate ones above, sessile, not decurrent; blades of the lower leaves oval or rhombic-ovate, 1.5–3.8 cm. long, 8–23 mm. wide, acute, at base rounded to broadly cuneate, subtruncate at extreme base; blades of the middle leaves ovate, 6–7.5 cm. long, 3.5–4.2 cm. wide, acute or acuminate, at base broadly rounded and minutely cordate, stiff-chartaceous, rather yellowish green especially beneath, triplinerved a little above the base and prominulous-reticulate especially beneath, sinuate-dentate above the entire lower third or quarter with 10–12 pairs of unequal acutish callous-tipped triangular teeth 0.5–1.5 mm. high, above evenly but not densely hispid with antrorse-spreading tuberculate-based white hairs and glandular-tuberculate between them, beneath spreading-hispid on the veins and veinlets and also on them hispidulous with much shorter gland-tipped hairs; upper leaves narrower, lance-ovate, 4.5 cm. long, 1.7 cm. wide; heads 3, about 3 cm. wide, the peduncles aggregated, 3.7–4 cm. long, densely glandular-hispidulous and sparsely spreading-hispid, naked, subtended by linear to subulate bracts 1.2–2 cm. long, 1–2.5 mm. wide; disk (as pressed) hemispheric, 1–1.2 cm. high, 1.3–1.5 cm. thick; involucre about 2-seriate, subequal or slightly graduate, 7–8 mm. high, the phyllaries linear-lanceolate (1.3–1.6 mm. wide), acute, callous-tipped, appressed, subherbaceous essentially throughout, few-ribbed toward base, not densely hispid and ciliate with tuberculate-based hairs and also tuberculate; rays about 11, golden-yellow, pistillate, the tube hirsute, 2 mm. long, the lamina oval, 2-dentate, about 10-nerved, 11–15 mm. long, 5–7 mm. wide; disk flowers numerous, their corollas golden-yellow, 7 mm. long (tube pilose, 1.4 mm., throat subcylindric, 4.8 mm., teeth ovate, 0.8 mm. long); pales yellow above, with blackish keel and erect yellow tips, acute, stipitate-glandular on keel and toward apex, about 8.5 mm. long; disk achenes (immature) obovate-cuneate, glabrous, 4.8 mm. long, narrowly winged above, the wings continuous with the 2 short teeth (0.2–0.5 mm. long) of the pappus.

MEXICO: Among low scrubby oaks in the "encinal" association, on Aguila Mountain, in Salteador range, about 10 km. from Charcas, San Luis Potosi, July-Aug. 1934, *C. L. Lundell* 5392 (type no. 1,589,219, U. S. Nat. Herb.).

A member of the section *Pterophyton*, nearest *V. rothrockii* Robins. & Greenm., in which the pubescence is different, the phyllaries oblong or

elliptic and obtuse, and the principal leaves rather abruptly contracted into a strongly auriculate-clasping base.

***Thelesperma scabridulum* Blake, sp. nov.**

Perenne (?) humile ramosum ubique scabridulum pilis brevibus incrassatis; folia lineari-filiformia apice subulato-acuta integra v. tripartita; capitula parva discoidea apice ramorum solitaria v. terna, pedunculis mediocribus; corollae lobi faucibus breviores; pappi aristae lineari-lanceolatae longe hispidociliatae.

Root slender, vertical, apparently perennial; stems several, 5–10 cm. high, erect or ascending, oppositely branched even from the base, densely scabridulous with short, dull white, mostly conical hairs of unequal length, leafy, the leaves mostly equaling or overtopping the heads; internodes mostly 5–10 mm. long; leaves opposite, linear-filiform, 1–3 cm. long, 0.4–1 mm. wide, thick, subulate-pointed, entire or above the middle bearing a pair of similar lobes 3–10 mm. long, sparsely pubescent like the stem, especially toward base, or nearly glabrous; peduncles solitary at apex of stem and branches and in the uppermost axils, densely pubescent like the stem, erect, slender, 0.5–2.7 cm. long; disk hemispheric, 5–8 mm. high (young fruit), 4–7 mm. thick (as pressed); involucre double, pubescent like the stem except on the scarious margins of the inner phyllaries, 4–5 mm. high, the outer phyllaries 3–4, lance-subulate, acuminate, 2–3 mm. long, 0.5–0.7 mm. wide, herbaceous, erect, very narrowly scarious-margined, the inner 7–8, ovate, acutish, 1.5–1.8 mm. wide, with herbaceous center and rather broad yellowish-white scarious margin (0.3–0.8 mm. wide), ciliolate toward apex, connate for 1–1.5 mm. at base; flowers 19–23, all hermaphrodite, their corollas golden-yellow, brown-striped, glabrous except for a few short blunt hairs on the back of the teeth, about 5 mm. long (tube 2 mm., throat cylindric-campanulate, 2 mm., teeth oblong-ovate, unequal, 4 of them 0.8–1.2 mm. long, 1 (the outermost) 1–1.4 mm. long); pales oblong, obtuse, about 4 mm. long, scarious throughout, with the midrib marked by 2 orange vittae, irregularly erose-dentate, ciliolate at apex, sometimes somewhat pubescent along midline; achenes narrowly oblong or obovate-oblong, about 3 mm. long, 1 mm. wide, somewhat thickened, straight or incurved, blackish, thickly and sometimes completely covered with irregular blunt yellowish tubercles, falling united with the pales; pappus awns 2, when well developed lance-linear, 1–1.2 mm. long, long-hispid-ciliate throughout or only above, sometimes reduced or obsolete; style branches with deltoid merely acute not cuspidate tips.

MEXICO: Open alkaline plain near railroad, between La Ventura and Ranchito de San Antonio, south of Gomez Farias, Coahuila, July-August 1934, *C. L. Lundell* 5728 (type no. 1, 589, 220, U. S. Nat. Herb.).

Distinct from any previously known species in its pubescence and dwarf habit.

***Calea acoma* Blake, sp. nov.**

Annua, caule tenui lignescente ramoso glandulari-piloso; folia lanceolata v. lineari-lanceolata acuminate sessilia minute denticulata 3-nervia glandulari-pilosa; capitula solitaria v. terna longe pedunculata radiata mediocria; radii albi; achenia calva glabra.

Slender annual, about 40 cm. high, with few opposite branches, the stem terete, multistriate, up to 2 mm. thick, rather sparsely pilose with many-

celled spreading gland-tipped hairs, glabrate below, the branches much surpassing the main stem; internodes of main stem mostly 2–10 mm. long, of branches 0.8–4 cm.; leaves opposite, 3–6 cm. long, 2–7 mm. wide, slightly narrowed at base, remotely callous-denticulate above middle (teeth 4–5 pairs, 0.5 mm. high or less), slightly revolute-margined, herbaceous, sparsely glandular-pilose on both sides, 3-nerved, the lateral pair of nerves weaker than the costa; heads solitary or ternate at apex of stem and branches, about 1.5–2 cm. wide, the peduncles slender, 2.8–15 cm. long, erectish-pilose especially just below the head and sparsely or densely spreading-pilose with gland-tipped hairs; disk (as pressed) 6–9 mm. high, 7–12 mm. thick; involucre 3-seriate, subequal or slightly graduate, 5–6 mm. high, hemispheric, appressed, the outermost phyllaries lanceolate, acutish, about 1 mm. wide, pale and subindurate below, subherbaceous in terminal half, sparsely ciliate with partly gland-tipped hairs, otherwise essentially glabrous, the others oblong or ovate-oblong, about 2 mm. wide, obtuse or subtruncate, often somewhat erose at apex, with pale base and mostly shorter greenish submembranous venose tip, similarly ciliate; rays about 8, white, the tube spreading-pilose, 2–2.8 mm. long, the lamina cuneate, 7–8 mm. long, 3.5–4.5 mm. wide, unequally 3-toothed (teeth blunt, 1–2 mm. long), 6–8-nerved; disk flowers numerous, their corollas yellow, 3–4 mm. long (tube spreading-pilose with several-celled hairs, 1.5–2 mm. long, throat campanulate, spreading-pilose at base, 1–1.5 mm. long, teeth ovate, 0.5 mm. long); pales acute, lacerate-ciliate, otherwise glabrous, several-vittate, about 4.5 mm. long; achenes of disk narrowly obovoid-oblong, several-striate, black, glabrous, 2 mm. long, bearing at apex a minute whitish annulus (apparently left by the base of the corolla); those of ray similar; style branches finely hispidulous, with acuminate triangular appendages.

COLOMBIA: In open place, western slope of Páramo de Hatico, en route from Toledo to Pamplona, Dept. Norte de Santander, alt. 2800–2900 m., 13 March 1927, *E. P. Killip & A. C. Smith* 20721 (type no. 1,355,717, U. S. Nat. Herb.); open hillside, vicinity of Mutiscua, Dept. Norte de Santander, alt. 3300 m., 20–22 Feb. 1927, *Killip & Smith* 19637; Páramo de las Puentes, above La Baja, Dept. Santander, alt. 3500–3700 m., 25 Jan. 1927, *Killip & Smith* 18230.

Closely allied to *Calea longipes* Blake, also a Colombian plant, of which it might almost be regarded as an epappose form. In that species, however, the leaves are shorter and relatively broader, and the gland-tipped hairs of stem and leaves of the new species are normally lacking; a few are present on the peduncles, however, in one specimen (*Niemeyer* 137).

Calea subcordata Blake, sp. nov.

Frutex, caule dense hirsuto-piloso; folia late ovata obtusa basi leviter cordata brevipetiolata chartacea crenata supra scabra subtus griseo-pilosula 3–5-plinervia subtus lacunoso-reticulata; capitula solitaria majuscula radiata aurea; involucri phyllaria extima ovata herbacea interiora subaequantia vel duplo breviora; pappi paleae 20 lineari-lanceolata achenio minute hispidulo duplo longiora.

Shrub 2.5 m. high or less, with opposite branches; stem stoutish, subterete, striatulate, 2–3 mm. thick, brownish, densely spreading-hirsute-pilose, in age glabrate and gray-barked; internodes 1–6 cm. long; leaves opposite; petioles stout, naked, pubescent like the stem, 3–8 mm. long; blades 2.5–6

cm. long, 2–4 cm. wide, obtuse, bluntly callous-apiculate, at base shallowly cordate or sometimes subtruncate-rounded, above light green, densely tuberculate-hispidulous with antrorse-curved hairs, when young gland-dotted, in age subbullate, beneath densely griseous-pilosulous with spreading hairs and dotted with sessile brown glands; heads solitary at apex of stem and branches, 2.5–3.5 cm. wide, the peduncle stoutish, pubescent like the stem, 0.8–2.8 cm. long; disk (as pressed) 8–12 mm. high, 1–1.7 cm. thick; involucre hemispheric, about 4-seriate, 10 mm. high, the outermost phyllaries about 4, ovate, usually abruptly contracted above the base, obtuse, herbaceous, veiny, densely hirsutulous, appressed, the others slightly graduate, oval-oblong or oblong-obovate, broadly rounded, ciliolate at apex or glabrous, with pale indurate body and shorter, brown, paler-margined, usually ampliate, subscarious tip; rays about 18, yellow, the tube glabrous, 5 mm. long, the lamina oblong, 4-denticulate, 5-nerved, gland-dotted on back, 9.5–11 mm. long; disk flowers numerous, their corollas yellow, glabrous, 6.4–7.3 mm. long (tube 2–2.3 mm., throat funnelform, 3.4–3.8 mm., teeth triangular, with a subapical thickening on back, 1–1.2 mm. long); pales narrow, glabrous, serrulate above or with a lateral tooth on each side, 5–7 mm. long; disk achenes sparsely hispidulous or in age glabrate, 2.8 mm. long; pappus of 20 long-acuminate persistent somewhat unequal awns, the longest 5–7 mm. long.

COLOMBIA: Open hillside, La Isla, Dept. Norte de Santander, alt. 2000–2500 m., 27 Feb. 1927, *E. P. Killip & A. C. Smith* 19808 (type no. 1,354,988, U. S. Nat. Herb.); open hillside, vicinity of Charta, Dept. Santander, alt. 2000–2600 m., 1–11 Feb. 1927, *Killip & Smith* 18898; in thicket, same locality, alt. 2000 m., 1–11 Feb. 1927, *Killip & Smith* 18866.

Related to *Calea trianae* Hieron., in which the relatively narrower leaves are elliptic-ovate to lance-oblong, cuneate or sometimes rounded but not cordate at base, and not closely lacunose-reticulate beneath in the manner of *C. subcordata*.

***Calea subcordata* var. *hirtella* Blake, var. nov.**

Rami dense hirtelli; pedunculi dense hirtelli sparsissime et breviter hispidique.

COLOMBIA: In grassland, Mesa de los Santos, Dept. Santander, alt. 1500 m., 11–15 Dec. 1926, *E. P. Killip & A. C. Smith* 15097 (type no. 1,351,036, U. S. Nat. Herb.).

This plant, described as a semiprostrate to suberect shrub up to 0.75 m. high, agrees with the typical form in all essential characters. The difference in pubescence, which is not due to weathering since it is shown by the young branches and peduncles, is sufficient to separate the plant varietally.

***Bahia dissecta* var. *anisopappa* Blake, var. nov.**

Achenia sparse hispidula pappo irregulari 1–8-squamellato 0.4–2.8 mm. longo praedita, squamellis linearibus vel lanceolatis saepius breviter aristatis; capitula (an semper ?) subdisciformia, corollis marginalibus discum non superantibus inaequaliter 4–5-dentatis vel subbilabiatis (3+1) erectis, staminibus abortivis.

LOWER CALIFORNIA: Sandy soil along La Sanca Creek, below La Grulla,

Sierra San Pedro Martir, alt. 2040 m., 17 Sept. 1930, *I. L. Wiggins & D. Demaree* 4870 (type no. 1, 588, 187, U. S. Nat. Herb.).

Bahia dissecta was described by Gray⁵ as having the lobes of the disk corollas "almost equalling the tube and throat together." Rydberg⁶ describes the lobes as "much longer than the short funnelform throat," and uses this character, together with the absence of pappus, to distinguish the species generically as his new genus *Amauriopsis*. In specimens dissected I find the corolla lobes varying from slightly longer than the throat to distinctly shorter, and never even approaching in length the combined tube and throat. The discovery in Lower California of the pappose form above described, otherwise indistinguishable from typical *B. dissecta* except by its imperfectly and perhaps abnormally disciform heads and more definitely hispidulous achenes, shows conclusively that the genus *Amauriopsis* cannot be maintained as distinct from *Bahia*. The squamellae in var. *anisopappa* are mainly scarious when small, but when better developed possess a callous midrib continued into the short awn. The achenes in the typical form are described by Rydberg as glandular-puberulent, but are normally so obscurely so as to appear essentially glabrous. The presence of much better developed hairs on the achenes of var. *anisopappa* is no doubt correlated here, as frequently elsewhere in Asteraceae, with the development of a pappus.

***Dyssodia tephroleuca* Blake, sp. nov.**

Suffrutescens ca. 20 cm. alta pluricaulis, ramis involuerisque dense albotomentosis, foliis et caulibus griseo-tomentosis; folia omnia alterna linearifiliformia integra ca. 1 cm. longa 0.3 mm. lata; capitula solitaria breviter pedunculata radiata aurea; involueri 6.5–8 mm. alti phyllaria ca. 13 paene ad apicem connata pauciglandulosa, basi bracteolis ca. 8 anguste linearibus apice patentibus involuero demidio brevioribus; achenia parce hispidula; pappi paleae 10 subaequales 3–5-aristatae.

Root about 1 cm. thick, vertical; main stems apparently spreading, about 20 cm. long, woody toward base, griseous-tomentose, bearing numerous mostly simple erectish leafy 1-headed branches about 10 cm. long, these slender, densely white-tomentose; leaves erectish, rather flaccid, mostly 8–13 mm. long, 0.3–0.7 mm. wide, obtuse, usually minutely apiculate, sulcate above, rounded beneath, bearing about 10 scattered or usually subopposite yellow glands; peduncles erect, naked or few-bracteate, mostly 7–15 mm. long, densely white-tomentose; heads about 12 mm. wide; involucre campanulate, 4–5 mm. thick, the bracteoles obtusish, 1–3-glandular, the proper phyllaries bearing a pair of yellow glands a little below the apex of the connate portion, the free teeth narrowly triangular, acutish, 1.5–2 mm. long, bearing a single gland usually near the base; rays about 12, golden-yellow, the tube glabrous, about 2 mm. long, the lamina oblong-oval, about 5 mm. long, 2.5 mm. wide, 2–3-denticulate, 6–7-nerved; disk flowers numerous, their corollas golden-yellow, 4.2–4.8 mm. long, minutely hispidulous toward base of throat (tube 1 mm., throat slender-funnelform, 2.6–3 mm., teeth ovate, 0.5–0.8 mm. long, with a minute inflexed tooth at apex); achenes

⁵ Proc. Amer. Acad. 19: 28. 1883, as *Bahia chrysanthemoides*.

⁶ N. Amer. Fl. 34: 32. 1914.

very slender, black, multistriate, sparsely hispidulous, 4 mm. long, 0.4 mm. wide; pappus 4–4.5 mm. long, of 10 nearly equal essentially 1-seriate paleae, their oblanceolate paleaceous base 0.5–1 mm. long, the central awn firm, subterete, yellowish, hispidulous, 3–3.8 mm. long, the 2 lateral awns broader, whiter, subscarios, hispidulous on margin, undivided or split for $\frac{2}{3}$ their length or less into 2 unequal awns; style appendages deltoid, finely hispidulous, short-cuspidate.

TEXAS: Eight miles north of Rio Grande City, Starr Co., 30 Aug. 1932, *Elzada U. Clover* 1825 (type no. 1,623,834, U. S. Nat. Herb.; dupl. in herb. Univ. Michigan).

Nearest *Dyssodia setifolia* (Lag.) Robinson, but well distinguished by its undivided leaves, much larger involucre, and very different pappus.

Dyssodia bracteata (S. Wats.) Blake.

Pectis bracteata S. Wats. Proc. Amer. Acad. **25**: 155. 1890.

Leucactinia bracteata Rydb. N. Amer. Fl. **34**: 180. 1915.

Specimens (nos. 5530, 5743, 5778) collected by C. L. Lundell at Charcas, San Luis Potosi, Mexico, in July-August 1934 agree perfectly with the type collection, *Pringle* 2403, from calcareous hills at Carneros Pass, Coahuila, which is apparently the only collection of this species hitherto made. It is difficult to understand how Dr. Rydberg was led to establish the new genus *Leucactinia*⁷ for the reception of this species. Its long style branches, of course, prevent its reference to *Pectis*, but the principal character on which it was distinguished as a genus is mistaken. In his key (p. 148) Rydberg placed it next to *Chrysactinia* in the group with "pappus of numerous distinct bristles only" (as opposed to the genera with "pappus at least partly squamellate"), and in his generic character described it as with "pappus simple, of 10–20 scabrous bristles." In the specific description, however, he called the pappus bristles "slightly dilated and linear-subulate below." Watson had previously described them as "narrowly paleaceous toward the base." The members of the pappus can, in point of fact, be described about equally well as paleaceous-based bristles or as aristate squamellae; they cannot properly be called scabrous bristles. I find them to be about 12–18 in number, indistinctly 2-seriate, the inner longer and with a linear to lanceolate paleaceous base 1–1.5 mm. long, its thickened costa passing gradually or abruptly into a hispidulous bristle about 3–3.5 mm. long, the outer shorter (about 3 mm. long) and with narrower or obsolescent paleaceous border. The species can be received without difficulty into the rather multiform genus *Dyssodia*. The 1 or 2 pairs of short lobes with setaceous-subulate tips found near the base or sometimes near the middle of some of the larger leaves were overlooked by Rydberg, although mentioned in the original description.

⁷ N. Amer. Fl. **34**: 180. 1915.

***Pectis propetes* var. *holochaeta* Blake, var. nov.**

Folia usque ad apicem setoso-ciliata (setis 14–24-jugis).

MEXICO: On plain, Acatitlan, Dist. Temascaltepec, State of Mexico, 23 Sept. 1933, *G. B. Hinton* 4797 (type no. 1,589,300, U. S. Nat. Herb.); on prairie, Limones, same District, alt. 910 m., *Hinton* 2509 p. p. (mixed with *P. saturejoides* (Mill.) Sch. Bip, the latter in two forms); on plain, Cutzamala, Dist. Coyuca, Guerrero, 11 Aug. 1934, *Hinton et al.* 6422.

In typical *Pectis propetes* Greenm., still known only from the type collection (*Rose* 2436, from near San Juan Capistrano, Zacatecas), the leaves have only 5–9 pairs of setae, usually borne much below the middle of the leaf, rarely extending a little above the middle. This sort of difference usually indicates specific diversity in the genus, but in this case it is supported by no other clear distinctions. In *P. propetes* the stems become somewhat diffusely branched, and the first one appears to be erect; in var. *holochaeta* there appears to be no erect first stem, and the usually several procumbent stems are simple or subsimple. In *P. propetes* the achenes are rather uniformly and not very densely short-pilose with hairs about 0.5 mm. long; in var. *holochaeta* they are much more densely pilose with hairs about 1 mm. long, usually borne in one or two broad lines with essentially glabrous interspaces. Without knowledge of the amount of variation to which *Pectis propetes* may be subject, it seems advisable to consider all these differences as of only subordinate importance.

***Pectis linifolia* var. *hirtella* Blake, var. nov.**

Involucri phyllaria dorso subdense hirtella; folia majora setis 2–3-jugis 4.5–6.5 mm. longis donata (jugis 1–2 basalibus, 1 infra medium folii).

MEXICO: On hill, Tanganhuato, Dist. Coyuca, Guerrero, 18 Sept. 1934, *G. B. Hinton et al.* 6606 (type no. 1,589,311, U. S. Nat. Herb.).

The type, a considerably branched plant about 7 dm. high, differs from all the numerous specimens of *Pectis linifolia* L. examined from Arizona, Mexico, West Indies, and South America in its hirtellous involucres and in the very long and slender purple setae of the leaves. The involucre of *P. linifolia* is described by Fernald and by Rydberg as glabrous or minutely puberulent, but is glabrous in all the specimens I have examined; and the setae are always basal, 1 or sometimes 2 pairs, rarely none, and only about 1–2 mm. long.

***Liabum longifolium* (Rusby). Blake.**

Munnozia longifolia Rusby, Bull. Torrey Club 54: 313. 16 May 1927.

Liabum hexagonum Blake, Journ. Washington Acad. Sci. 17: 300. 4 June 1927.

Both these specific names were based on the same collection, *Buchtien* 3079 from Unduavi, Bolivia.

***Cirsium trachylomum* Blake, sp. nov.**

Glabrum subvalidum valde erecto-ramosum capitulis numerosis; folia

principalia oblonga alte pinnatifida sessilia breviter decurrentia apice acuminata subcoriacea pallide viridia, lobis ca. 5-jugis lanceolatis v. oblongis acuminatis subintegris v. parum repando-dentatis margine rigide spinosis et spinulosis, spinis albidis ca. 5 mm. longis; capitula majuscula sicc. campanulata ca. 4.5 cm. alta irregulariter racemosa (1-6 per ramum) in pedunculis nudis v. bracteatis saepius 4-15 cm. longis; involucri basi vix umbilicati paucibracteati (bracteis spinoso-dentatis involucrium vix aequantibus) ca. 7-8-seriati valde gradati ca. 3 cm. alti phyllaria omnia erecta v. subappressa in margine plusminusve lutescenti-indurata et dense ciliolata, exteriora triangulari-lanceolata ad apicem breviter subherbacea spina rigida erecta ca. 2 mm. longa donata, media ovato-lanceolata v. lanceolata spina 2-4 mm. longa erecta donata, interiora (ca. 3-4-seriata) lanceolata-linearia acuminata in margine latiore dense et minute hispidula et ciliolata infra apicem breviter purpurascens appendice subscariosa anguste triangulari integra minute ciliolata flavescens-albida ca. 2 mm. longa donata; corollae purpureae, limbo tubo duplo longiore usque ad medium 5-fido, lobis obtusis ad apicem incrassatis; achenium maturum brunneo-nigrescens 4 mm. longum.

Plant essentially glabrous throughout, 1-1.2 m. high; stem pithy, striate, up to 1 cm. thick; leaves rather remote, the principal ones 13-21 cm. long, about 6-10 cm. wide, short-decurrent (wings 1-2 cm. long, lobed and spiny-toothed, 1-2.5 cm. wide including spines), light green on both sides, very slightly arachnoid toward base beneath, the lobes acuminate and spinose-tipped, about 2-4 cm. long and 1-2 cm. wide, entire or slightly sinuate-dentate or the lower 1-2-lobed on one side at base, not densely margined with slender prickles or small spines 1-3 mm. long and ending in firm slender spines 5-7 mm. long; upper and branch leaves smaller, dentate or shallowly lobed, not or scarcely decurrent; bracts of peduncles few, 2-6 cm. long, their basal teeth or spines enlarged; bracts subtending head narrowly lanceolate, 1.5-3 cm. long; outermost proper phyllaries about 1 cm. long, 2-3.5 mm. wide below, with indurated whitish or greenish-white base and lucid yellowish-white densely hispidulous-ciliate margin about 0.3-0.5 mm. wide, above 1-ribbed (the rib sometimes glandular), sometimes 1-2-spinulose on each side below apex; middle phyllaries similar but broader (4.5 mm. wide), with 2-3 pairs of weak greenish ribs or nerves below apex, and with broader yellowish white margin (about 1 mm. wide); inner (3-4 series) with narrow greenish center (1-3-vittate) and broader, lucid, apparently viscid, densely and minutely hispidulous and ciliate yellowish-white margin; whole involucre glabrous (except for the minute hispidity and ciliation) or with the slightest trace of arachnoid tomentum on the margin of a few phyllaries; corollas 2.7-3.1 cm. long (tube 7-9 mm. long, throat moderately distinct, 9 mm. long, lobes linear, essentially equal, 11-13 mm. long, thickened at apex and often obtusely apiculate); achene glabrous, 4-5 mm. long; pappus whitish, 2 cm. long, the awns all plumose, about 10 of the inner with obscurely thickened tips; anther tips broadly triangular, shortly acuminate; style with obscure node.

LOWER CALIFORNIA: Granitic soil among pines along small canyon above a meadow, La Encantada, Sierra San Pedro Martir, alt. 2225 m. (7300 ft.), 18 Sept. 1930, *I. L. Wiggins & D. Demaree* 4904 (type no. 1,588,186, U. S. Nat. Herb.; duplicate in Dudley Herb. of Stanford University).

This species is not very closely allied to any hitherto reported from Mexico.

Its closest relationships are evidently with *C. andersonii* (A. Gray) Petrak, of California, and *C. rothrockii* (A. Gray) Petrak, of Arizona, from both of which it is entirely distinct.

***Gochnatia cardenasii* Blake, sp. nov.**

Frutex parvus valde ramosus, ramulis compacte flavido-tomentellis foliosis; folia elliptica brevipetiolata ca. 8 mm. longa obtusa integra supra viridia subtus canescenti-tomentella anguste revoluto-marginata parum venosa; capitula 7-8-flora terminalia sessilia saepius solitaria mediocria; involucri 8-9 mm. alti phyllaria e triangulari-ovatis lineari-oblonga acuminata pubescentia.

Shrub "60 cm. high," the numerous straight rigid branches diverging at an angle of about 30-45°, the stem and older branches densely gray-tomentellous; leaves alternate, often with fascicles in their axils, the internodes mostly 5-10 mm. long; petioles 1-2 mm. long, canescent-tomentellous, slender, somewhat enlarged at base; blades elliptic or ovate-elliptic, 5-11 mm. long, 1.5-3.5 mm. wide, cuneate or rounded at base, coriaceous, above glutinous and essentially glabrous, obscurely triplinerved, the veins evident beneath under the tomentum; fruiting heads solitary or rarely paired at tips of stem and branches, usually subtended by 2 or 3 reduced leaves, sometimes with 1-4 abortive heads in the axils below them, when moistened cylindric and about 11-14 mm. high and 2.5 mm. thick; involucre strongly graduate, about 5-seriate, the phyllaries brownish, firm, ribless, ciliolate with partly glandular hairs, erectish-pilose, and somewhat sessile-glandular, glabrescent, the inmost almost cuspidate-acuminate; corollas apparently whitish, tubular, subcylindric, glabrous, 8 mm. long (tube 3 mm., throat 0.7 mm., teeth narrowly elongate-triangular, 4.3 mm. long, erect, 3-nerved, thickened inside at apex); achenes oblong, erectish-pilose, 3.5 mm. long; pappus yellowish-tinged, 9-10 mm. long, of numerous stiffish hispidulous graduated bristles; anthers 6.2 mm. long, including the hairy tails, these about 2.8 mm. long; style branches linear-oblong, 1.2 mm. long, erectish, obtuse, glabrous.

BOLIVIA: Quechisla, Dept. Potosí, alt. 3420 m., Dec. 1932, *M. Cárdenas* 326 (type no. 1,616,163, U. S. Nat. Herb.); Quechisla, Dec. 1931, *Cárdenas* 15 (Gray Herb.).

Readily distinguished among South American species by its yellowish-tomentellous branchlets and tiny bicolored leaves. The rather ample material is in good fruit, but the corollas have practically all fallen; only two perfect ones and an imperfect one could be found in the heads.

***Chaptalia anisobasis* Blake, sp. nov.**

Basi rufo-tomentosa; folia oblongo-elliptica longe petiolata obtusa basi valde inaequalia tenuiter coriacea repanda supra citissime glabrata viridia subtus ochraceo-tomentosa; scapus ca. 25 cm. altus infra glabratus nudus ad spicem dense rufo-tomentosus et squamis paucis anguste triangularibus praeditus; involucri ca. 1.3 cm. alti phyllaria e oblongo-ovatis linearia obtusa; fl. fem. exteriores ca. 20 valde bilabiati involucri breviores, interiores minores etiam bilabiati; achenia immatura breviter rostrata puberula.

Root not seen; leaves 2 or 3 (or more?), apparently erect; petioles slender, naked except toward apex, thinly arachnoid-tomentose, glabrescent, 8-12.5 cm. long; blades oblong-elliptic or ovate-elliptic, or sometimes slightly wider

above the middle, 3.5–6.3 cm. long, 2–2.8 cm. wide, usually strongly inequilateral at base (usually subtruncate or slightly cordate on one side, subtruncate or obliquely curved on the other) and often very narrowly decurrent on apex of petiole for 1.2 cm. or less, shallowly repand chiefly below middle, very narrowly revolute-margined, featherveined, the lateral veins 4–6 on each side, scarcely prominulous above, evident through the wool beneath, the secondaries obscure; scape erect, 20–26 cm. high, slender, thinly arachnoid-tomentose and glabrate except toward apex, there very densely rufous-tomentose and bearing 3 or 4 very narrowly triangular or subulate bracts about 2.5 mm. long; head solitary, apparently nodding; involucre about 6-seriate, strongly graduate, the outer phyllaries oblong or ovate-oblong, obtuse, 1–1.5 mm. wide, the middle ones linear-oblong, 1.3–1.5 mm. wide, obtuse, the inner linear, about 1.5 mm. wide, obtuse or acutish, all with greenish center and purple subscarios margin; outer pistillate flowers about 16–21, essentially 1-seriate, their corollas bilabiate, white, somewhat purplish-veined, glabrous, shorter than the involucre (not fully developed?), erect, the tube 5 mm. long, the outer lip elliptic-linear, 3-denticulate, 4-nerved, 5.3 mm. long, about 1.5 mm. wide, the inner lip 2-parted to base, the divisions linear, obtuse, erect, about 1.2 mm. long; corollas of inner pistillate flowers bilabiate, glabrous, white, 6.4 mm. long, the tube 5 mm. long, the lips erect, the outer 3-lobed to below the middle (lobes narrow-triangular, with incurved blunt callous tips, the middle lobe 1.2 mm. long, the outer lobes 0.8 mm.), the inner of 2 similar lobes 1 mm. long; corollas of hermaphrodite flowers white, glabrous, bilabiate, 8 mm. long, the tube 3.5 mm. long, the throat 2 mm. long, the outer lip subequally 3-lobed to below the middle, the lobes triangular, at apex thickened and papillose inside, 1.5 mm. long, the inner lip of 2 similar lobes 2.5 mm. long; achenes (decidedly immature) subfusiform, short-beaked, somewhat puberulous, a few of the hairs with subglandular tips; pappus bristles numerous, yellowish-white, about 7.5 mm. long, finely hispidulous.

COLOMBIA: Páramos of the Sierra Nevada de Santa Marta, Dept. Magdalena, alt. about 3850 m., July 1932, *William Seifriz* 484 (type no. 1,572,393, U. S. Nat. Herb.).

Close to *Chaptalia meridensis* Blake, of Venezuela, in which the essentially symmetrical leaves are broadly oval, thicker, rather persistently arachnoid above or tardily glabrate, and on petioles only as long as the blade or shorter.

***Microseris tenella* var. *aphantocarpha* (A. Gray) Blake.**

Calais aphantocarpha A. Gray, Proc. Amer. Acad. 6: 552. 1865.

Microseris aphantocarpha Schultz Bip. Pollichia 22–24: 308. 1866.

Gray,⁸ when transferring his *Calais tenella* (of 1857) and *C. aphantocarpha* (of 1865) to *Microseris*, regarded the former as merely a depauperate state of the latter, and adopted the name *aphantocarpha* for the specific concept on account of the inappropriateness of the name *tenella*. Schultz Bipontinus had earlier transferred these and other species described or listed by Gray in 1857 to *Microseris*, but his paper was overlooked by Gray and by most later authors. The earlier specific name, *Microseris tenella* (A. Gray) Schultz Bip., must of course be adopted for the species, and *aphantocarpha* treated as a variety.

⁸ Proc. Amer. Acad. 9: 209. 1874.